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WHAT IS CLAIMED IS

A selective polarization matching filter comprising:

a filter housing formed of a first material;

a replicate property matching material disposed encapsulated within said filter housing; and

a pair of substantially parallel plates disposed encapsulated within said filter housing on opposite sides of said replicate property matching material, said plates being formed of a second material different from said first material.

- 2. A selective polarization matching filter according to claim 1, further comprising a pair of grounding leads disposed coupled to said plates, respectively, and extending to an exterior of said filter housing.
- 3. A selective polarization matching filter according to claim 1, wherein said first material is a polymer, said second material is a polymer different from said first material, and said replicate property matching material is a dielectric material.
- 4. A selective polarization matching filter according to claim 3, wherein said first material is polyurethane.
- 5. A selective polarization matching filter according to claim 4, wherein said second material is acrylonitrile-butadiene-styrene.
- 6. A selective polarization matching filter according to claim 5, wherein said replicate property matching material is selected in accordance with dielectric polarization characteristics of a to-be-detected entity.

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7.	A selective polarization matching filter according to claim 6,
wherein s	aid replicate property matching material comprises one of nano-
structured	l human keratin protein polymer, nano-structured animal keratin protein
polymer,	or a polymer blend.

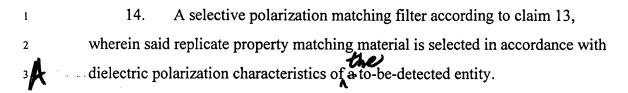
- 8. A selective polarization matching filter according to claim 3, wherein said second material is acrylonitrile-butadiene-styrene.
- 9. A selective polarization matching filter according to claim 3, wherein said replicate property matching material is selected in accordance with dielectric polarization characteristics of a to-be-detected entity.
- 10. A selective polarization matching filter according to claim 9, wherein said replicate property matching material comprises one of nano-structured human keratin protein polymer, nano-structured animal keratin protein polymer, or a polymer blend.
- 11. A selective polarization matching filter according to claim 1, wherein said first material is a polymer, said second material is metal, and said replicate property matching material is a conducting material.
- 12. A selective polarization matching filter according to claim 11, wherein said first material is polyurethane.
- 13. A selective polarization matching filter according to claim 12, wherein said second material is one of copper, brass, aluminum and steel.

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- 15. A selective polarization matching filter according to claim 14, wherein said replicate property matching material is one of gold, silver, platinum, palladium or iron.
- 16. A selective polarization matching filter according to claim 1, wherein said replicate property matching material is selected in accordance with dielectric polarization characteristics of a to-be-detected entity.
- 17. A selective polarization matching filter according to claim 16, wherein said replicate property matching material is one of nano-structured human keratin protein polymer or nano-structured animal keratin protein polymer.
- 18. A selective polarization matching filter according to claim 16, further comprising an auxiliary attachment containing one of 2-propanol or 2-methyl-2-propanol operatively cooperating with the filter.

49. A selective polarization matching filter comprising:

a filter housing formed of a replicate dielectric property matching material, said filter housing defining a cavity therein having a pair of exit ports;

a dielectric material disposed in said cavity, said dielectric material being different from said replicate dielectric matching material; and

a pair of conducting inserts disposed in said exit ports, respectively, said conducting inserts extending to an exterior of said filter housing.

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1	20.	A selective polarization matching filter according to claim 19
2	wherein said	d dielectric material disposed in said cavity is air.

21. A selective polarization matching filter according to claim 19, further comprising an auxiliary attachment containing one of 2-propanol or 2-methyl-2-propanol operatively cooperating with the filter.

A selective polarization matching filter comprising a composition of materials configured to generate an opposite polarization pattern based on a polarization pattern of a to-be-detected entity.

- 23. A selective polarization matching filter according to claim 22, wherein said composition of materials comprises a replicate property matching material selected in accordance with dielectric polarization characteristics of the entity to be detected.
- 24. A selective polarization matching filter according to claim 23, wherein said composition of materials further comprises at least one dielectric material.
- 25. A selective polarization matching filter according to claim 22, wherein said composition of materials comprises acrylonitrile-butadiene-styrene (ABS) disposed encapsulated in polyurethane.
 - 26. A selective polarization matching filter according to claim 25, wherein said composition of materials further comprises a replicate dielectric property matching material disposed encapsulated in said polyurethane and enclosed by said ABS.

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A method of manufacturing a selective polarization matching filter comprising assembling a composition of materials to generate an opposite polarization pattern based on a polarization pattern of a to-be-detected entity.

- 28. A method according to claim 27, wherein said assembling step comprises encapsulating a replicate property matching material selected in accordance with dielectric polarization characteristics of the entity to be detected in a dielectric material.
- 29. A method according to claim 28, wherein the assembling step further comprises encapsulating a pair of substantially parallel plates in the dielectric material and enclosing the replicate property matching material with the plates.

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